

ABSTRACT

High quality intraframe-only compression of video can be achieved using rate distortion optimization and without resizing or bit depth modification. The compression process involves transforming portions of the image to generate frequency domain coefficients for each portion. A bit rate for each transformed portion using a plurality of scale factors is determined. Distortion for each portion is estimated according to the plurality of scale factors. A scale factor is selected for each portion to minimize the total distortion in the image to achieve a desired bit rate. A quantization matrix is selected according to the desired bit rate. The frequency domain coefficients for each portion are quantized using the selected plurality of quantizers as scaled by the selected scale factor for the portion. The quantized frequency domain coefficients are encoded using a variable length encoding to provide compressed data for each of the defined portions. The compressed data is output for each of the defined portions to provide a compressed bitstream at the desired bit rate.